

REMARKS

In view of the above amendments and arguments herein, Applicants believes the pending application is in condition for allowance.

I. Status of the Claims

Claims 1 and 2 are currently pending. In the present Response, Applicants amend independent claim 1. No new matter is introduced. Support may be found in Applicants' specification, for example, at page 8, line 15 through page 10, line 23, and page 11, line 17 through page 14, line 32.

II. Rejections under 35 U.S.C. § 102

Claims 1 and 2 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,195,989 to Hall et al. ("Hall"). Claims 1 and 2 are also rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,798,050 to Nakamura et al. ("Nakamura"). Applicants respectfully traverse these rejections.

In amended independent claim 1, Applicants claim:

1. A fan revolution speed control method for controlling a pump-motor system so as to control the fan revolution speed of a cooling fan that is adapted to be rotated by a fan motor so as to cool a cooling target fluid, said pump-motor system adapted to drive said fan motor by means of hydraulic fluid supplied from an engine-driven fan pump, wherein said fan revolution speed control method comprises steps of:

detecting a temperature of a cooling target fluid,

determining a target fan revolution speed of said cooling fan based on the detected temperature of said cooling target fluid,

controlling said pump-motor system so that the fan revolution speed starts from a minimum fan revolution speed at the-start-up of the engine, wherein said minimum fan revolution speed is a predetermined speed not dependent upon the detected temperature of said cooling target fluid, and

further controlling said pump-motor system so that the fan revolution speed gradually increases to said target fan revolution speed.

(Emphasis added).

Hall discloses a power control system for a machine having an engine and a cooling fan (see, e.g., abstract of Hall). With reference to FIGs. 2 - 5 of Hall, a machine control 106 controls the speed of hydraulic cooling fan 34 and engine cooling fan 28 according to a temperature of the hydraulic oil and engine oil, respectively. In sharp contrast to Applicants' invention as claimed in amended independent claim 1, however, Hall fails to disclose or suggest a fan speed control method in which a fan revolution speed starts from a minimum fan revolution speed not dependent upon a detected temperature of a target fluid, and then gradually increases to a target fan revolution speed that is based on a detected temperature of the target fluid. Accordingly, Applicants respectfully submit that amended independent claim 1 is not anticipated by Hall.

Nakamura discloses a control system for a hydraulic pump in a motor vehicle, which operates to decrease a bypass flow of a fluid in response to an increasing fluid or ambient temperature, and thereby to increase the speed of a fan driven by a hydraulic motor powered by a non-bypass flow of the fluid (see, e.g., Col. 2: 58 - Col. 3: 40 of Nakamura). Like Hall, Nakamura fails to disclose or suggest a fan speed control method in which a fan revolution speed starts from a minimum fan revolution speed not dependent upon a detected temperature of a target fluid, and then gradually increases to a target fan revolution speed that is based on a detected temperature of the target fluid. Accordingly, Applicants respectfully submit that amended independent claim 1 is not anticipated by Nakamura.

This distinguishing element of Applicants' claimed invention is significant. By controlling Applicants' pump-motor system so that the fan revolution speed starts from a minimum fan revolution speed at the start-up of the engine before gradually increasing to the target fan revolution speed, the target fan revolution speed is not step input into the pump-motor system at the start-up of the engine. As a result, the risk of damage to one or more of the fan pump and fan motor is

substantially reduced (see, e.g., Applicants' specification at page 3, lines 4 - 23). In addition, instability ("hunting") in the fan revolution speed is also avoided.

As amended independent claim 1 is not anticipated by either of Hall and Nakamura, Applicants respectfully submit that amended independent claim 1 stands in condition for allowance. As claim 2 depends from allowable claim 1, Applicants further submit that dependent claim 2 is also allowable for at least this reason.

Applicants therefore respectfully request that the rejections of claims 1 and 2 under 35 U.S.C. § 102(b) be withdrawn.

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

If there are any other issues remaining which the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

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Respectfully submitted,

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